Amendments to the Claims

Listing of Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of forming an electrode, comprising:

a) providing a plurality of evaporation materials in solid-state forms, wherein the plurality of evaporation materials includes metals or metal compounds and the differences of the vapor pressure between each of the evaporation materials are within two orders of magnitudes at a selected evaporation temperature;

b) separately placing the evaporation materials, each in solid form, into a single evaporation source in an evaporation chamber;

c) pumping the evaporation chamber down to a predetermined vacuum condition; and

d) heating the evaporation source to a predetermined temperature and evaporating the materials to form the electrode.

2. (Original) The method of claim 1 including:

a) monitoring the total evaporation rate to a predetermined value by adjusting the applied electrical power;

b) opening a shutter to start evaporation;

c) closing the shutter when the thickness of the electrode layer has reached a predetermined value; and

d) turning off the power supply.

3. (Cancelled)

4. (Original) The method of claim 3 wherein the plurality of metals includes Mg in combination with Yb, Sb, Sr, or Zn.

5. (Original) The method of claim 3 wherein the plurality of metals includes Al in combination with Sn, Cu, Nd, Sc, or Au.

6. (Original) The method of claim 3 wherein the plurality of metals includes Ag in combination with Dy, Ga, Er, Al, In, or Mn.

7. (Withdrawn) The method of claim 1 wherein the plurality of evaporation materials include the combination of metal and organometallic compound.

8. (Withdrawn) The method of claim 1 wherein the plurality of evaporation materials include the combination of metal and polymeric material.

9. (Withdrawn) The method of claim 1 wherein the plurality of evaporation materials include the combination of metal, metal compound, and organometallic compound.

10. (Withdrawn) The method of claim 1 wherein the plurality of evaporation materials include the combination of metal, metal compound, and polymeric material.

11. (Cancelled)

12. (Withdrawn) The method of claim 10 wherein the evaporation source is made of tantalum, iridium, molybdenum, platinum, tungsten, stainless steel, carbon, boron nitride, aluminum oxide, or quartz.

13. (Original) The method of claim 1 wherein the evaporation source has one or more compartments containing evaporation materials.

14. (Currently Amended) The method of claim 13 wherein the evaporation materials are placed separately into each of the compartments in the evaporation source.

15. (Original) The method of claim 1 wherein the evaporation materials are mixed together in the evaporation source.

REMARKS

Claim 14 was rejected under 35 USC 112 second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 14 has been amended to depend on claim 13 and this should overcome the rejection.

Claims 3 and 11 have been cancelled.

Claims 1, 3-4, 13 and 15 were rejected under 35 USC 103(a) as being unpatentable over Namiki et al (USP 5429884) in view of Ishikawa et al (US Publication No. 2001/0012571).

Claim 1 has been amended to clearly state that the two or more evaporation materials has placed separately in a single evaporation source. It has also been amended to specify that the evocation materials are metals or metal compounds. Claim 3 has been cancelled. It is an important feature of this invention that the differences of the vapor pressure between each of the evaporation materials are within two orders of magnitudes at a selected evaporation temperature. Applicants had discovered that when the vapor pressures of the solid metal or metal compound materials are with two orders of magnitude, a single heated source can effectively be used to deposit these materials to form an electrode. Applicants note that no one prior to the present invention recognized these features,

Namiki et al relates to forming an electrode having magnesium and strontium components. In column 7, lines 3-25, Namiki et al first form an alloy matrix of these two metals. This requires extra processing and handling.. Namiki et al then use this alloy matrix in a single source under a single heated control to form an electrode. It is quite clear that Namiki et al never recognized that separated strontium and magnesium could be placed in a single source without forming an alloy matrix first. In fact, Namiki et al teach away from the present invention in column 7, lines 34-41 where it is stated that an alloy facilitates the deposition of the appropriate amounts. In fact, strontium and magnesium are within two orders of magnitude in terms of their vapor pressure and applicants are the first to discover that the more complex arrangement of forming an alloy matrix is unnecessary as set forth in amended claim 1.